R marks

Applicants respectfully request reconsideration of the present application in view of the above amendments and following remarks. Claims 1 and 2 have been amended to more clearly define the present invention and claim 16 has been added. Claims 3-15 have been withdrawn without prejudice or disclaimer. Applicants reserve the right to file a continuation application directed to the subject matter of the non-elected claims prior to the issuance of a patent on those claims elected for further prosecution at this time. Therefore, claims 1, 2 and 16 are pending in the present application.

Applicants submit herewith a formalized version of FIGS. 1-11c that were originally filed with the present patent application.

Claims 1 and 2 have been rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. *See Office Action*, pg. 2. Specifically, the Examiner states that the language "non-uniform over the areal extent of the cell" in claim 1 does not provide a standard for ascertaining the requisite degree. *See id.* In view of the rejection, claim 1 has been amended to state that "the flow of electric current through the cell is non-uniform over a flow area of the cell." Thus, Applicants respectfully request that the rejection of claim 1 based upon indefiniteness be withdrawn.

Claims 1 and 2 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent Application No. 2002/0098400 to Mieney et al. ("the

Mieney reference"). In the alternative, claims 1 and 2 have also been rejected under 35 U.S.C. § 103(a) as being unpatentable over the Mieney reference. Applicants respectfully traverse these rejections.

Amended claim 1 is directed to a fuel cell for generating an electric current by combining hydrogen and oxygen wherein resistance to the flow of electric current through the cell is non-uniform over a flow area of the cell. The flow area is non-parallel to the flow of oxygen ions through the cell. The non-uniform electrical resistance over the flow area of the cell operates to regulate the flow of oxygen ions through any region of the cell in proportion to the partial pressure of hydrogen in the region.

By providing a fuel cell in accordance with the present invention, numerous advantages are realized. For example, the non-uniform electrical resistance over the flow area of the cell suppresses excess oxygen migration and build-up in regions having low hydrogen concentration and correspondingly increases oxygen migration and build-up in regions having a surfeit of hydrogen. *See Specification*, pg, 4, lines 1-3. As a result, destructive oxidation of the fuel cell is prevented and electrical output is increased due to a greater percentage of hydrogen consumption. *See Specification*, pg, 4, lines 3-5.

None of the references of record teach or suggest a fuel cell wherein the resistance to the flow of electric current through the cell is non-uniform over a flow area, wherein the flow area is generally non-parallel to the flow of said oxygen ions through the cell as recited in claim 1. The Examiner stated that the Mieney reference discloses the limitations of claim 1 because the anode, cathode and

electrolyte are formed of different materials and therefore inherently have a varied electrical resistance pattern due to the varied composition of the components. While the electrical resistance in the Mieney reference may be varied by taking a cross-section through the anode, cathode, and electrolyte components, there is nothing to indicate that the electrical resistance is non-uniform over a flow area that is non-parallel to the flow of oxygen ions through the cell. The only flow areas in the Mieney reference that appear to be non-parallel to the flow of oxygen ions are the anode, cathode and electrolyte. There is no indication that any these fuel cell components in the Mieney reference taken individually have a non-uniform electrical resistance.

For at least the foregoing reason, Applicants submit that the Mieney reference fails to teach or suggest every limitation disclosed in amended claim 1 and requests that the rejection of claim 1 be withdrawn. As claim 2 depends from claim 1, Applicants request that the rejection of claim 2 be withdrawn for at least the same reason set forth with respect to claim 1.

Dependant claim 2 recites additional features that are distinguishable from the references of record. For instance, claim 2 states that the electrical resistance is non-uniform over one of said anode, cathode, and electrode. In contrast, the electrical resistance of the anode, the cathode or the electrolyte in the Mieney reference are not disclosed as having non-uniform electrical resistance. The fact that each of the materials may have different electrical resistance characteristics relative to each other does not mean that the electrical resistance of each component, taken alone, is non-uniform. Since the Mieney reference does not teach

or suggest all of the limitations included in claim 2, Applicants request that the rejection of claim 2 be withdrawn.

Moreover, claim 16 states that the flow area is generally perpendicular to the flow of oxygen ions through the cell, which is not taught or suggested by the references of record. Therefore, Applicants submit that claim 16 is in proper form for allowance.

Conclusion

In light of the foregoing, Applicants submit that claims 1, 2 and 16 are in condition for allowance and such allowance is respectfully requested. Should the Examiner feel that any unresolved issues remain in this case, the undersigned may be contacted at the telephone number listed below to arrange for an issue resolving conference.

Applicants do not believe that any fee is due at this time, however, the Commissioner is hereby authorized to charge any fee that may have been overlooked to Deposit Account No. 10-0223.

Respectfully submitted,

Dated: 2/2/04

Dennis B. Danella
Reg. No. 46,653

JAECKLE FLEISCHMANN & MUGEL, L.L.P.
39 State Street
Suite 200
Rochester, New York 14614-1310
Tel: (585) 262-3640
Fax: (585) 262-4133

or suggest all of the limitations included in claim 2, Applicants request that the rejection of claim 2 be withdrawn.

Moreover, claim 16 states that the flow area is generally perpendicular to the flow of oxygen ions through the cell, which is not taught or suggested by the references of record. Therefore, Applicants submit that claim 16 is in proper form for allowance.

Conclusion

In light of the foregoing, Applicants submit that claims 1, 2 and 16 are in condition for allowance and such allowance is respectfully requested. Should the Examiner feel that any unresolved issues remain in this case, the undersigned may be contacted at the telephone number listed below to arrange for an issue resolving conference.

Applicants do not believe that any fee is due at this time, however, the Commissioner is hereby authorized to charge any fee that may have been overlooked to Deposit Account No. 10-0223.

Respectfully submitted,

Dated: 2/2/04

Dennis B. Danella
Reg. No. 46,653

JAECKLE FLEISCHMANN & MUGEL, L.L.P.
39 State Street
Suite 200
Rochester, New York 14614-1310
Tel: (585) 262-3640
Fax: (585) 262-4133